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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	PAPER NUMBER
4172	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,333	LONING ET AL.	
	Examiner	Art Unit	
	THOMAS BENNETT MCKENZIE	4172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/19/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claim11-14** are rejected under 35 U.S.C. 103 (a) as being unpatentable over Janzen et al (DD145540A).

Regarding **claim 11**, Janzen et al substantially teaches the basic claimed method of purifying (Janzen translation, p.2 line 1) and cooling (implicit) a gas stream comprising a dialkyl ester A) of an aromatic dicarboxylic acid (DMT, Janzen translation, p.2, line 3), which comprises treating the gas stream with a dihydroxy compound B) (glycol, Janzen translation, p.3, line 10-11) at a temperature less than/equal to the melting point of the dialkyl ester A) in a first stage (Janzen translation, p.3, line 11) and treating the gas stream with an aliphatic dihydroxy compound B) at above the melting point of the dihydroxy compound in at least one second stage (Janzen translation, p.3, line 11-12) wherein the dihydroxy compound B) (glycol) has a

temperature less than/equal to 140°C in the first stage (Janzen translation, p.3, line 11) and has a temperature of from 20 to 80°C in the second stage (Janzen translation, p.3 line 11).

Note that Janzen does not teach a second stage. However, Janzen does teach "complete reuse of DMT sublimate" (Janzen translation, p.3 line 6). Note also that the first stage cooling does not yield complete recovery. It would have been obvious to one of ordinary skill in the art at the time of the invention to repeat the first stage cooling at the disclosed temperature to ensure a high yield in recovery.

Regarding **claim 12**, Janzen et al teaches the dialkyl ester A) is an ester of terephthalic acid, isophthalic acid, 2,6-naphthalendicarboxylic acid or mixture thereof (dimethyl terephthalate, Janzen translation, p.2, line 1). Note that dimethyl terephthalate is an ester of terephthalic acid.

Regarding **claim 13**, Janzen et al teaches a dialkyl ester A) having alkyl radicals having from 1 to 4 carbon atoms (dimethyl terephthalate, Janzen translation, p.2, line 1). Note also that dimethyl terephthalate contains two alkyl radical carbon atoms.

Regarding **claim 14**, Janzen et al teaches the gas stream that is purified to be a laden inert gas stream (Janzen translation, p.2, lines 6-7; p.3, lines 1-2).

4. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Janzen in view of Fike et al (U.S. 6,312,503) hereafter referred to as Fike.

Regarding **claim 15**, Janzen et al teaches a dihydroxy compound used being a diol having from 2 to 6 carbon atoms (glycol, Janzen translation, p.3, line 6). Note that Janzen does not explicitly teach a diol having from 2 to 6 carbons, but does disclose glycol. Glycol is a generic term meaning dihydric acid, and could contain 2 to 6 carbons.

However, Fike teaches a method of scrubbing and quenching nitrogen gas using ethylene glycol (column 1, lines 11-12). Note that ethylene glycol is a diol that contains two carbons. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use ethylene glycol in the system described by Janzen for achieving the desired effect.

5. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Janzen in view of Serenkov et al (DD 160829), hereafter referred to as Serenkov et al.

Regarding **claim 16**, Janzen et al teaches a dihydroxy compound B) used being glycol (glycol, Janzen translation, p.3, line 6). Note that glycol is a generic term for dihydric acid. Note also that Janzen does not explicitly teach using 1,4-butanediol as the dihydroxy compound B).

However, Serenkov et al teaches a method of washing a vapor containing DMT using 1,4-butanediol (Serenkov translation p.4, line 22). Therefore it would have been obvious at the time the invention was made to one of ordinary skill in the art to combine the washing method described in Serenkov with the method described in Janzen for achieving the desired effect.

Regarding **claim 17**, Janzen et al teaches a dialkyl ester A) used being dimethyl terephthalate (dimethyl terephthalate, Janzen translation, p.2, line 1)

Regarding **claims 18 and 19**, while the reference is silent to the degree of saturation of the gas stream with respect to the dialkyl ester after purification and cooling, note that the claimed amounts are well known in the art for optimal purification and cooling and it would have been obvious to one of ordinary skill in the art at the time the invention was made to so include for this benefit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS BENNETT MCKENZIE whose telephone number is (571) 270-5327. The examiner can normally be reached on Monday-Thursday 7:30AM-5:00PM, second Friday of bi-week 7:30AM-4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANGELA ORTIZ can be reached on (571) 272-1206. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tm

/Angela Ortiz/

Supervisory Patent Examiner, Art Unit 4172